

3.3 INSTRUMENTATION

3.3.6 Engineered Safeguards Protective System (ESPS) Manual Initiation

LCO 3.3.6 Two manual initiation channels of each one of the ESPS Functions below shall be OPERABLE:

- a. High Pressure Injection, Reactor Building (RB) Non-Essential Isolation, Keowee Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input (ES Channels 1 and 2);
- b. Low Pressure Injection (ES Channels 3 and 4);
- c. RB Cooling, RB Essential Isolation and Penetration Room Ventilation (ES Channels 5 and 6); and
- d. RB Spray (ES Channels 7 and 8).

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 when associated engineered safeguard equipment is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESPS Functions with one channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours

(continued)

SURVEILLANCE REQUIREMENTS

-----NOTE-----

These SRs apply to each PAM instrumentation Function in Table 3.3.8-1 except where indicated.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	31 days
SR 3.3.8.2	<p>-----NOTE-----</p> <p>Only applicable to PAM Functions 7, 10 and 22.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	12 months
SR 3.3.8.3	<p>-----NOTES-----</p> <ol style="list-style-type: none"> 1. Neutron detectors are excluded from CHANNEL CALIBRATION. 2. Not applicable to PAM Functions 7,10, and 22. <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	18 months

3.3 INSTRUMENTATION

3.3.18 Emergency Power Switching Logic (EPSL) Voltage Sensing Circuits

LCO 3.3.18 Three channels of each of the following EPSL voltage sensing circuits shall be OPERABLE:

- a. Startup Transformer;
- b. Standby Bus 1;
- c. Standby Bus 2; and
- d. Auxiliary Transformer.

-----NOTES-----

- 1. If both N breakers are open, Auxiliary Transformer voltage sensing circuits are not required to be OPERABLE.
- 2. When not in MODES 1, 2, 3 and 4, only EPSL voltage sensing circuit(s) associated with required AC power source(s) are required to be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each circuit.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required circuits with one channel inoperable.	A.1 -----NOTE----- The Completion Time is reduced when in Condition L of LCO 3.8.1. ----- Restore channel to OPERABLE status.	24 hours

(continued)

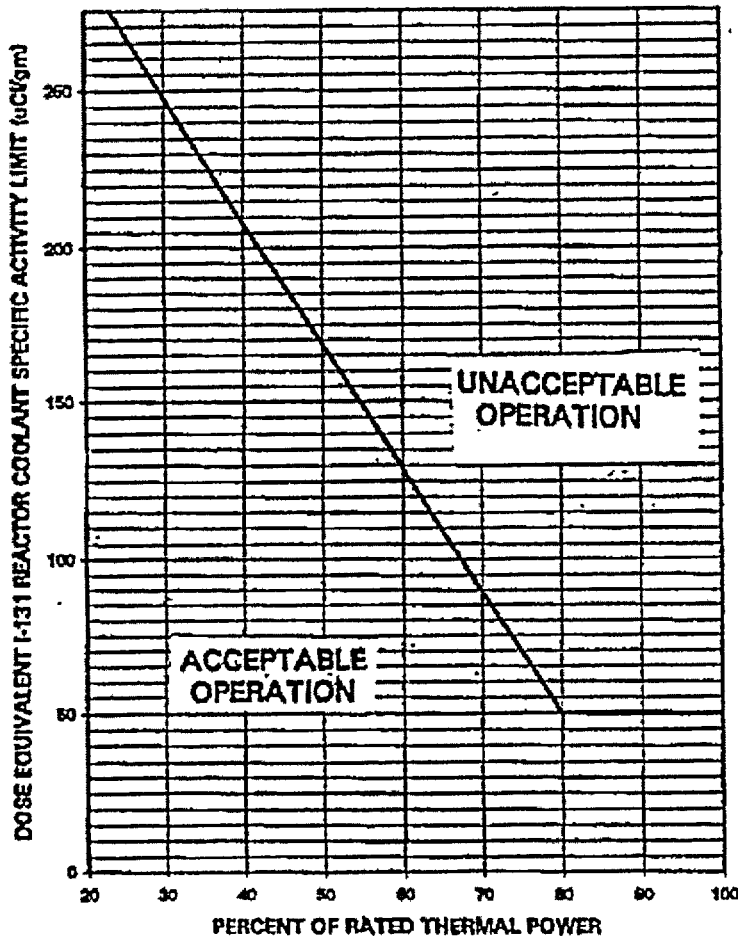


Figure 3.4.11-1 (page 1 of 1)
Reactor Coolant DOSE EQUIVALENT I-131 Specific Activity Limit
Versus Percent of RATED THERMAL POWER With Reactor Coolant
Specific Activity > 1.0 µCi/gm DOSE EQUIVALENT I-131

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.14.1 -----NOTE----- Not required to be performed in MODES 3 and 4. -----</p> <p>Verify leakage from each required RCS PIV is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2150 psia and ≤ 2190 psia.</p>	<p>18 months</p> <p><u>AND</u></p> <p>Prior to entering MODE 2 whenever the unit has been in MODE 5 for ≥ 7 days, if leakage testing has not been performed in the previous 9 months.</p>

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14</p> <p>-----NOTE----- Not required to be performed for an SL breaker when its standby bus is energized from a LCT via an isolated power path. -----</p> <p>Verify each closed SL and closed N breaker opens on an actuation of each redundant trip coil.</p>	<p>18 months</p>
<p>SR 3.8.1.15</p> <p>-----NOTE----- Redundant breaker trip coils shall be verified on a STAGGERED TEST BASIS. -----</p> <p>Verify each 230 kV switchyard circuit breaker actuates to the correct position on a switchyard isolation actuation signal.</p>	<p>18 months</p>
<p>SR 3.8.1.16</p> <p>-----NOTE----- Only applicable when complying with Required Action C.2.2.4. -----</p> <p>Verify one KHU provides an alternate manual AC power source capability by manual or automatic KHU start with manual synchronize, or breaker closure, to energize its non-required emergency power path.</p>	<p>As specified by Required Action C.2.2.4</p>

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

- a. One source from the offsite transmission network to the onsite AC electrical power distribution system(s) required by LCO 3.8.9, "Distribution Systems – Shutdown". The offsite power source shall be an offsite circuit available or connected to one of the following:
 1. 230 kV switchyard to a unit startup transformer to one main feeder bus,
 2. 230 kV switchyard, or 525 kV switchyard for Unit 3, to the main step-up and unit auxiliary transformers to one main feeder bus, or
 3. Central switchyard to one main feeder bus.
- b. One emergency power source capable of supplying the onsite AC electrical power distribution system(s) required by LCO 3.8.9. The emergency power source shall include one of the following:
 1. One Keowee Hydro Unit (KHU) capable of providing power through the underground emergency power path to one main feeder bus,
 2. One KHU capable of providing power through the overhead emergency power path to one main feeder bus, or
 3. One LCT energizing one standby bus via an isolated power path to one main feeder bus.

-----NOTES-----

1. A unit startup transformer may be shared with a Unit in MODES 1 through 6.
 2. The requirements of ITS 5.5.19, "Lee Combustion Turbine Testing Program," shall be met when a LCT is used for the emergency power requirements.
 3. The required emergency power source and required offsite power source shall not be susceptible to a failure disabling both sources.
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SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. SR requirements for both standby buses or both main feeder buses are reduced to one standby bus and one main feeder bus. 2. SR 3.8.1.4 requirement to energize the underground emergency power path is not applicable. <p>-----</p> <p>For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources – Operating," except SR 3.8.1.7, SR 3.8.1.13, SR 3.8.1.14, SR 3.8.1.15 and SR 3.8.1.16, are applicable.</p>	<p>In accordance with applicable SRs</p>

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources – Shutdown

LCO 3.8.4 125 VDC Vital I&C power source(s) shall be OPERABLE to support the 125 VDC Vital I&C power panelboard(s) required by LCO 3.8.9, "Distribution Systems – Shutdown" and shall include at least one of the unit's 125 VDC Vital I&C power sources.

APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required 125 VDC Vital I&C power sources inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
<u>AND</u>		
A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately	
<u>AND</u>	(continued)	

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.10.1.11	Verify for required SSF battery that the cell to cell and terminal connections are clean, tight and coated with anti-corrosion material.	12 months
SR 3.10.1.12	Verify battery capacity of required battery is adequate to supply, and maintain in OPERABLE status, the required maximum loads for the design duty cycle when subjected to a battery service test.	12 months
SR 3.10.1.13	Perform CHANNEL CALIBRATION for each required SSF instrument channel.	18 months
SR 3.10.1.14	Verify OPERABILITY OF SSF valves in accordance with the Inservice Testing Program.	In accordance with the Inservice Testing Program
SR 3.10.1.15	<p>-----NOTE----- Not applicable to the SSF submersible pump. -----</p> <p>Verify the developed head of each required SSF pump at the flow test point is greater than or equal to the required developed head.</p>	In accordance with the Inservice Testing Program
SR 3.10.1.16	Verify the developed head of the SSF submersible pump at the flow test point is greater than or equal to the required developed head.	2 years

5.5 Programs and Manuals

5.5.16 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

- a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable; or
- b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or
- c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.17 Backup Method for Determining Subcooling Margin

This program ensures the capability to accurately monitor the Reactor Coolant System Subcooling Margin. The program shall include the following:

- a. Training of personnel, and
- b. Procedures for monitoring.

5.5.18 KHU Commercial Power Generation Testing Program

The KHU Commercial Power Generation Testing Program shall include the following and shall be met during periods of KHU commercial power generation:

- a. Verify upon an actual or simulated actuation signal, each KHU's overhead tie breaker and underground tie breaker actuate to the correct position from an initial condition of commercial power generation every 18 months.
- b. Verify upon an actual or simulated actuation signal, each KHU's frequency is ≤ 66 Hz in ≤ 23 seconds from an initial condition of commercial power generation every 18 months.

BASES

APPLICABLE SAFETY ANALYSES (continued) The ESPS manual initiation ensures that the control room operator can rapidly initiate ES Functions. The manual initiation trip Function is required as a backup to automatic trip functions and allows operators to initiate ESPS whenever any parameter is rapidly trending toward its trip setpoint.

The ESPS manual initiation functions satisfy Criterion 3 of 10 CFR 50.36 (Ref. 1).

LCO Two ESPS manual initiation channels of each ESPS Function shall be OPERABLE whenever conditions exist that could require ES protection of the reactor or RB. Two OPERABLE channels ensure that no single random failure will prevent system level manual initiation of any ESPS Function. The ESPS manual initiation Function allows the operator to initiate protective action prior to automatic initiation or in the event the automatic initiation does not occur.

The required Function is provided by two associated channels as indicated in the following table:

Function	Associated Channels
HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	1 & 2
LPI	3 & 4
RB Cooling, RB Essential isolation, and Penetration Room Vent.	5 & 6
RB Spray	7 & 8

APPLICABILITY The ESPS manual initiation Functions shall be OPERABLE in MODES 1 and 2, and in MODES 3 and 4 when the associated engineered safeguard equipment is required to be OPERABLE. The manual initiation channels are required because ES Functions are designed to provide protection in these MODES. ESPS initiates systems that are either reconfigured for decay heat removal operation or disabled while in MODES 5 and 6. Accidents in these MODES are slow to develop and would be mitigated by manual operation of individual components. Adequate time is available to evaluate unit conditions and to respond by manually operating the ES components, if required.